

```

1  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX GC1/118_HUMAN
1  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX GC3_HUMAN/118

41  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX GC1/118_HUMAN
41  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX GC3_HUMAN/118

81  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX A S T GC1/118_HUMAN
81  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX A S T GC3_HUMAN/118

121  KGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GC1/118_HUMAN
121  KGPSVFPLAP[C]S[R]STSGGTAALGCLVKDYFPEPVTVSWNS GC3_HUMAN/118

161  GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYI C GC1/118_HUMAN
161  GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTY[T]C GC3_HUMAN/118

201  NVNHKPSNTKVDKKVE----- GC1/118_HUMAN
201  NVNHKPSNTKVDK[R]VE[LKTPPLGDTTHTCPRCPPEPKSCDTP GC3_HUMAN/118

217  -----PKSCDKTHTCPPCPAPE GC1/118_HUMAN
241  P[CP]CPRCPPEK.SCDTPPPCPRCPPEPKSCD[T]P[P]C[P][R]CPAPE GC3_HUMAN/118

234  LLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEV GC1/118_HUMAN
281  LLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEV GC3_HUMAN/118

274  KFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDW GC1/118_HUMAN
321  [Q]F[X]WYVDGVEVHNAKTKPREEQYNST[E]RVVSVLTVLHQDW GC3_HUMAN/118

314  LNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP GC1/118_HUMAN
361  LNGKEYKCKVSNKALPAPIEKTISK[T]KGQPREPQVYTLPP GC3_HUMAN/118

354  SRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKT GC1/118_HUMAN
401  SR[E]E[M]TKNQVSLTCLVKGFYPSDIAVEWES[S]GQPENNY[N]T GC3_HUMAN/118

394  TPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSQSVMH EALH GC1/118_HUMAN
441  TPP[M]LDSDGSFFLYSKLTVDKSRWQQGN[T]FQSVMH EALH GC3_HUMAN/118

434  NHYTQKSLSLSPGK GC1/118_HUMAN
481  N[R]E TQKSLSLSPGK GC3_HUMAN/118

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FIG. 1

10 20 30 40

1 XXX GC1/118_HUMAN
1 XXX GC2/118_HUMAN
1 XXX GC4/118_HUMAN

50 60 70 80

41 XXX GC1/118_HUMAN
41 XXX GC2/118_HUMAN
41 XXX GC4/118_HUMAN

90 100 110 120

81 XXX GC1/118_HUMAN
81 XXX GC2/118_HUMAN
81 XXX GC4/118_HUMAN

130 140 150 160

121 KGPSVFPPLAPSSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GC1/118_HUMAN
121 KGPSVFPPLAP[CS]RSTSES]TAALGCLVKDYFPEPVTVSWNS GC2/118_HUMAN
121 KGPSVFPPLAP[CS]RSTSES]TAALGCLVKDYFPEPVTVSWNS GC4/118_HUMAN

170 180 190 200

161 GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYIC GC1/118_HUMAN
161 GALTSGVHTFPAVLQSSGLYSLSSVVTVPSS[NE]FGTQTY[T]C GC2/118_HUMAN
161 GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGT[K]TY[T]C GC4/118_HUMAN

210 220 230 240

201 NVNHKPSNTKVDKKEPKSCDKTHTCPPCPAP[EL]LGGPSV GC1/118_HUMAN
201 NV[Q]HKPSNTKVDK[TV]ERK[Q]C]---VECP[PC]PAP[P-VA]GPSV GC2/118_HUMAN
201 NV[Q]HKPSNTKVDK[R]VE[SK]Y[G]---P[PC]P[Q]CPAP[EL]LGGPSV GC4/118_HUMAN

250 260 270 280

241 FLFPPKPKD[TL]MISRTPEVTCVVVDVSHEDPEVKFNWYVD GC1/118_HUMAN
237 FLFPPKPKD[TL]MISRTPEVTCVVVDVSHEDPEV[Q]FNWYVD GC2/118_HUMAN
238 FLFPPKPKD[TL]MISRTPEVTCVVVDV[S]QEDPEV[Q]FNWYVD GC4/118_HUMAN

290 300 310 320

281 GVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYK GC1/118_HUMAN
277 GVEVHNAKTKPREEQ[F]NST[Q]RVVSVLTV[V]HQDWLNGKEYK GC2/118_HUMAN
278 GVEVHNAKTKPREEQ[F]NSTYRVVSVLTVLHQDWLNGKEYK GC4/118_HUMAN

330 340 350 360

321 CKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTK GC1/118_HUMAN
317 CKVSNK[Q]LPAPIEKTISK[TK]KGQPREPQVYTLPPSR[E]E[M]TK GC2/118_HUMAN
318 CKVSNK[Q]LP[S]SIEKTISKAKGQPREPQVYTLPPS[Q]E[M]TK GC4/118_HUMAN

370 380 390 400

361 NQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD[SL]S GC1/118_HUMAN
357 NQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP[M]LD[SL]S GC2/118_HUMAN
358 NQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD[SL]S GC4/118_HUMAN

410 420 430 440

401 DGSFFLYSKLTVDKSRWQQGNV[FS]CSVMHEALHNH[HY]TQKS GC1/118_HUMAN
397 DGSFFLYSKLTVDKSRWQQGNV[FS]CSVMHEALHNH[HY]TQKS GC2/118_HUMAN
398 DGSFFLYS[R]LTVDKSRWQ[Q]GNV[FS]CSVMHEALHNH[HY]TQKS GC4/118_HUMAN

441 LSLSPGK GC1/118_HUMAN
437 LSLSPGK GC2/118_HUMAN
438 LSLS[L]GK GC4/118_HUMAN

FIG. 2

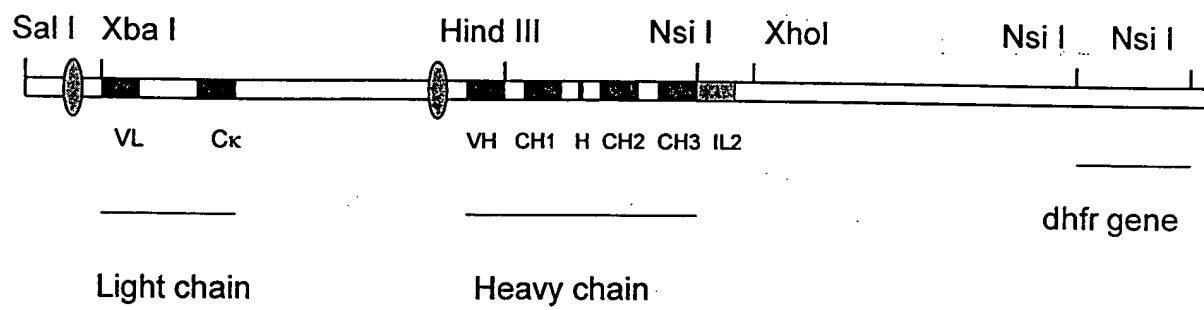


FIG. 3

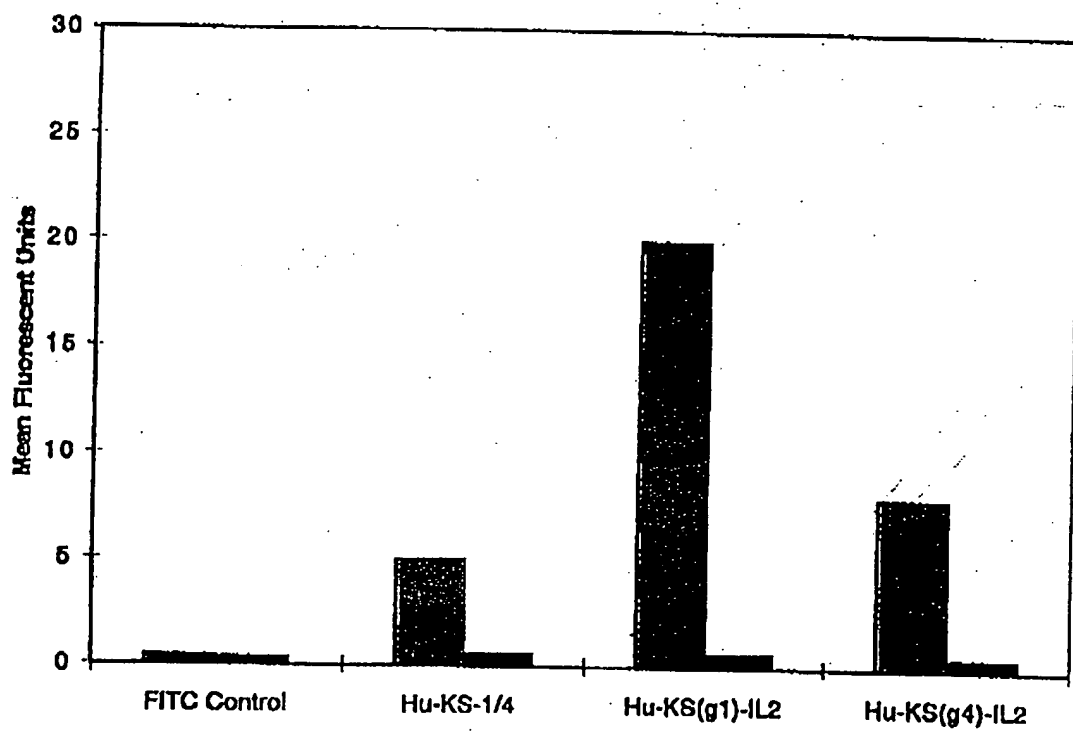


FIG. 4

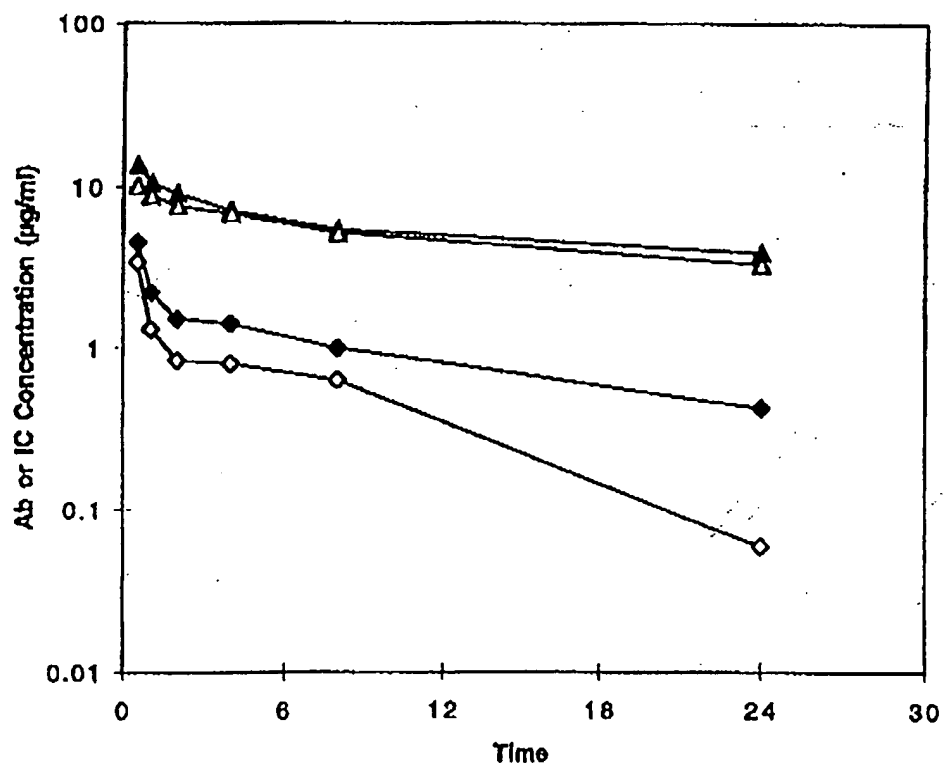
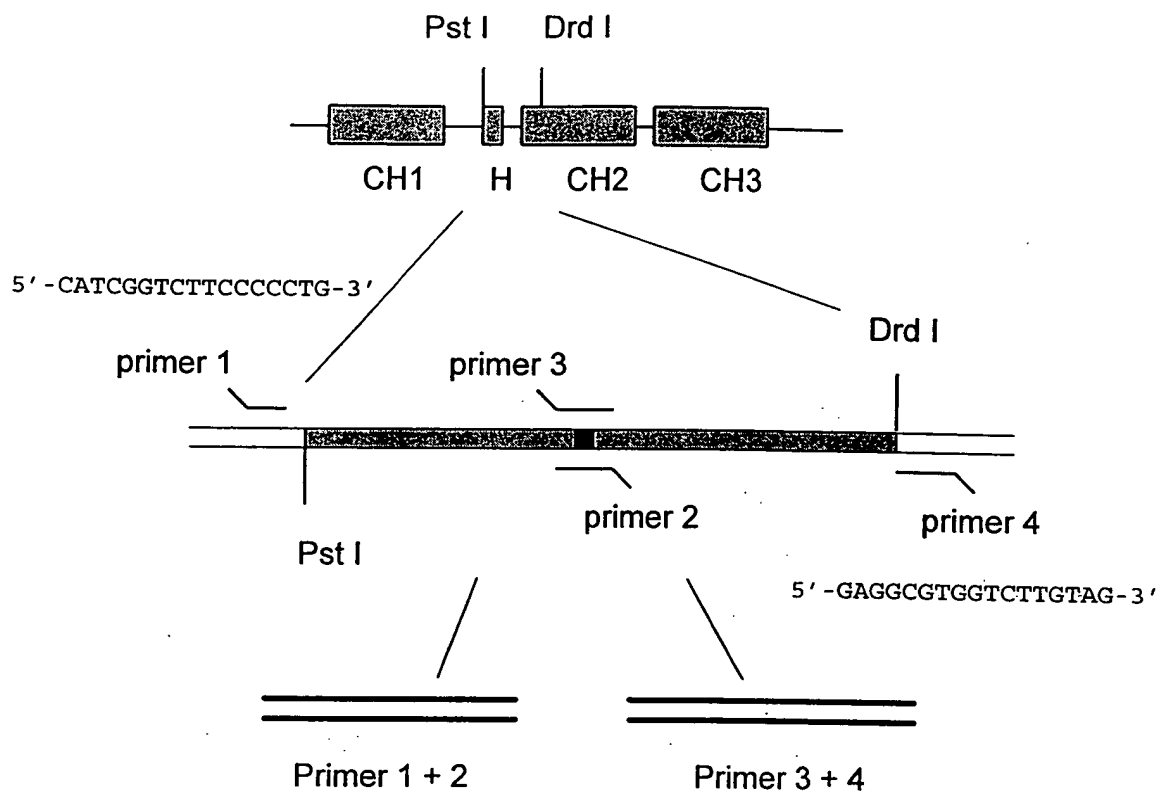
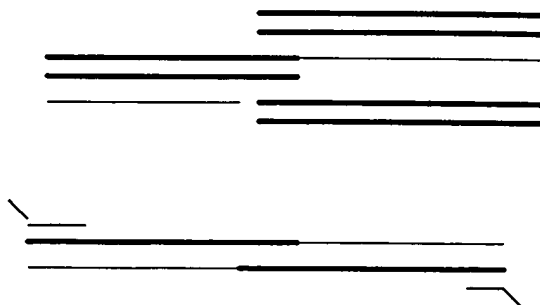


FIG. 5



Primer 3
 5' - TCTTCCTCAGCACCTCCCGTCGCAGGACCGTCAGTCTTCCTCTTC - 3'
 3' - GGTAGAGAAGGAGTCGTGGAGGGCAGCGTCCTGGC - 5'
 Primer 2

Mix PCR products, denature, anneal and extend



Amplify joined product with end primers 1 + 4

FIG. 6

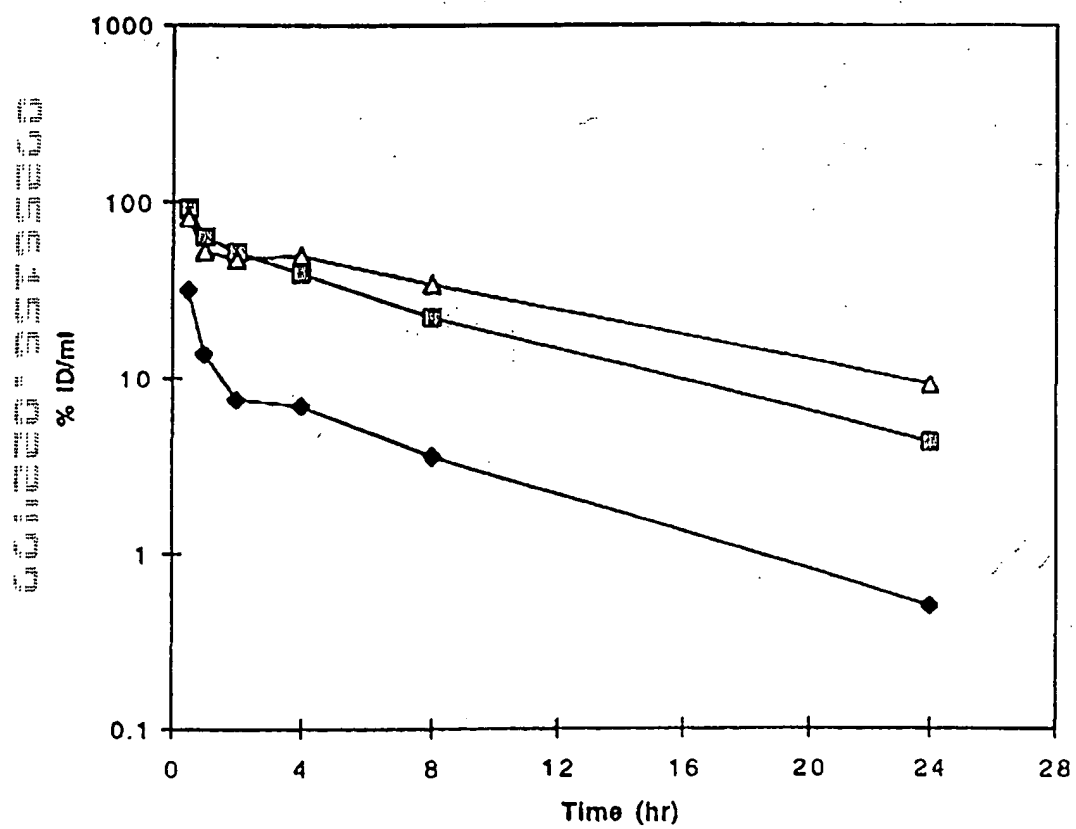


FIG. 7